

SECTION 00839

PROCESSED LIGHTWEIGHT DESLICKING GRIT

Type IV

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Supply and deliver processed lightweight material for use as Type IV deslicking grit.

1.2 REFERENCES

- A. AASHTO T 11: Materials Finer than 75 μm (no. 200) Sieve in Mineral Aggregates by Washing.
- B. AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates.
- C. AASHTO T 89: Determining the Liquid Limit of Soils.
- D. AASHTO T 90: Determining the Plastic Limit and Plasticity Index of Soils.
- E. AASHTO T 176: Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalency Test
- F. AASHTO T 255: Total Moisture Content of Aggregate by Drying
- G. ASTM C-29: Dry Loose Unit Weight, PCF
- H. ASTM C-70: Standard Test Method for Surface Moisture in Fine Aggregates
- I. ASTM C-330: Standard Specification for Lightweight Aggregates

1.3 SUBMITTALS

- A. Ten days before delivery begins, submit a written report on the following:
 - 1. Aggregate suitability.
 - 2. Name of supplier and source.
 - 3. Gradation including single values for each sieve size.

- B. For each shipment, supply bill of lading showing:
1. Type and grade of material
 2. Destination
 3. Consignee's name
 4. Date of Shipment
 5. Truck identification
 6. Gross weight of material in tons, cubic yards, and a loose unit weight per cu. ft.
 7. Moisture content at time of loading, reported to the nearest one percent (1.0%).
 8. Bill of lading number.
 9. Manufacturer
- C. Grab sample of material from truck properly marked and sealed to be left at destination for visual inspection along with bill of lading documentation.

1.4 QUALITY ASSURANCE

- A. Remove defective products and replace with acceptable products at no additional cost to the Department.
- B. All products that do not meet specification may be accepted in an emergency situation and will be penalized according to Table 2.

1.5 ACCEPTANCE

- A. Vendor determines and reports moisture content of materials provided under this contract.
- B. Department may test randomly at vendor's plant or at delivery locations.
- C. Vendor notifies Department of UDOT production dates at least one working day in advance so Department may arrange plant-site test if desired.
1. Deleterious Substances
 - a. Pay factors for deleterious substances when tested are indicated in Table 1.
 - b. Deleterious substances are defined, as items not normally found in processed mineral product such as weeds, stick, paper, trash, metal, plastic, leaves, and other organic debris.
 - c. This applies only if Department does not order correction or removal of any or all of the material represented by the tests.

Table 1

Deleterious Substances		
Material	Max. Percent (by weight)	Pay Factor
Other Substances	Greater than 2.0	0.20

2. Price Adjustments – Gradation:
- Based upon number samples per lot and the minimum pay factor.
 - Pay factors for aggregate gradation when tested in accordance with AASHTO T 27 are indicated in Table 2.
 - Acceptance will be on a lot-by-lot basis where a lot consists of a single day's production.
 - Conduct one random moisture, gradation and loose unit weight test within each subplot.
 - If the Mean of Deviations of test results varies from the Combined Aggregate Target more than the minimum shown under the 0.70 pay factors of Table 2, the pay factor for the material allowed to remain in place is 0.50. This applies only if the Engineer does not order correction or removal of any or all of the material represented by the tests.

Table 2						
Pay Factors for Aggregate Gradation						
Mean of The Deviations of Sieve Gradation Results From The Combined Aggregate						
Target - Expressed in Percentage Points						
SIEVE SIZES	Pay Factor	1 TEST Max-min	2 TESTS Max-Min	3 TESTS Max-Min	4 TESTS Max-Min	5 TESTS or More Max - Min
No. 4	1.00	0 - 14	0.0 - 10.5	0.0 - 8.8	0.0 - 7.8	0.0 - 7.0
	0.95	15 - 17	10.6 - 12.1	8.9 - 10.1	7.9 - 9.0	7.1 - 8.0
	0.90	18	12.2 - 13.1	10.2 - 11.0	9.1 - 9.8	8.1 - 8.7
	0.80	19 - 20	13.2 - 14.9	11.1 - 12.5	9.9 - 11.1	8.8 - 10.0
	0.70	21 - 22	15.0 - 16.3	12.6 - 13.6	11.2 - 12.1	10.1 - 10.8
No. 8	1.00	0 - 11	0.0 - 8.2	0.0 - 6.9	0.0 - 6.2	0.0 - 5.6
	0.95	12 - 13	8.3 - 9.4	7.0 - 7.9	6.3 - 7.1	5.7 - 6.4
	0.90	14	9.5 - 10.3	8.0 - 8.6	7.2 - 7.8	6.5 - 7.0
	0.80	15 - 16	10.4 - 11.6	8.7 - 9.8	7.9 - 8.8	7.1 - 8.0
	0.70	17	11.7 - 12.7	9.9 - 10.7	11.7 - 12.7	8.1 - 8.7
No. 200	1.00	0 - 4.5	0.0 - 3.4	0.0 - 2.9	0.0 - 2.5	0.0 - 2.3
	0.95	4.6 - 5.2	3.5 - 3.9	3.0 - 3.3	2.6 - 2.9	2.4 - 2.6
	0.90	5.3 - 5.6	4.0 - 4.3	3.4 - 3.6	3.0 - 3.1	2.7 - 2.9
	0.80	5.7 - 6.4	4.4 - 4.8	3.7 - 4.1	3.2 - 3.6	3.0 - 3.3
	0.70	6.5 - 7.0	4.9 - 5.3	4.2 - 4.5	3.7 - 3.9	3.5 - 3.6

3. Unit Weight
 - a. Department may direct removal of material not conforming to unit weight requirements listed in Table 3.
 - b. If Department does not order removal adjust unit price by one percent (1.0%) for every full pound over the specified maximum unit weight.
4. Plasticity – Remove material found to be plastic.

PART 2 PRODUCTS

2.1 AGGREGATES

- A. Aggregate is 100 percent processed lightweight with a dry unit weight between 50 lb/ft³ to 70 lb/ft³
- B. Meet properties listed in Table 3, 4, and 5.

Table 3

Lightweight Deslicking Grit Properties		
Dry Loose Unit Weight (minimum)	50 lb/ft ³	ASTM C-330
Dry Loose Unit Weight (maximum)	70 lb/ft ³	ASTM C-330
Material Passing No. 40 Sieve	Non-plastic	AASHTO T 89/T 90
Deleterious Materials	Less than 2% by weight	Visual Inspection
Gradation Limits	Table 4	AASHTO T 11, T 27

Table 4

Processed Lightweight Deslicking Grit Gradation

Sieve Size	Dry Loose Unit Weight
	50-70 lb/ft³
#4	85-100
#8	60-100
#16	25-70
#30	5-45
#50	0-25
#100	0-7
#200	0-3

Table 5
Lightweight Deslicking Grit Sand Equivalency

Grit Type	Sand Equivalency
Processed Light-Weight Deslicking Grit	Greater than 80

2.2 SOURCE QUALITY CONTROL

- A. Deslicking Grit: Comply with properties listed in Tables 3, 4, and 5.
 - 1. Department selects samples randomly.
 - 2. Department determines the suitability of the aggregate source based on values listed in Tables 3, 4, and 5.
- B. If tests indicate materials do not meet specified requirements, change material source and retest at no additional cost to Department.

PART 3 EXECUTION

3.1 DELIVERY

- A. Delivery: Deliver to locations listed on the bid schedule between 8:00 AM and 4:00 PM, Monday through Thursday. Notify station supervisor twenty-four hours prior to delivery. Unload material where directed by Department.
 - 1. Delivery Method One: Deliver using end dump or rear discharge belt trucks only. No Trailers.
 - 2. Delivery Method Two: Deliver using end dump trucks, end dump trucks with pups, or end dump trailers.
 - 3. Delivery Method Three: Deliver using end dumps, end dumps with pups, end dump trailers, side dumps, or belly dumps.
 - 4. Delivery Method Four: Load state trucks F.O.B. at supplier's production facility, stockpile, railhead, or other designated location. Supplier specifies point of delivery in writing if other than normal place of business.

END OF SECTION

Comment: Change Record
Aug 14, 2003- Initial Publication -
Sept 2, 2003 - Revised Department
testing and stockpiling -
Aug 13, 2004 -Modified for lighter grit
Jul 19, 2006 - Edited and modified to
specify natural foamed obsidian or
pumice